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SDR-OMNI Avionics Flight Line Test Set

The SDR-OMNI provides the avionics technician with a comprehensive suite of RF test capability in a single ruggedized, yet lightweight, package for demanding commercial and military customers.

The unit has a highly readable and responsive touchscreen for quick and convenient avionics testing – especially for performing FAA required transponder, ADS-B, and ELT tests. Professionally formatted reports can be downloaded via USB or wirelessly printed to a local wireless printer.

Test functionality:

- Transponder and FAA Part 43
- ADS-B 1090 and 978 UAT (IN and OUT)
- VOR and ILS (with combined LOC + GS + MB)
- HF / VHF / UHF COMM Radios (AM & FM)
- SELCAL
- ELT / EPIRB
- Aircraft Audio Systems (audio distortion)
- VSWR / Distance to Fault (DTF) / Cable Loss
- TCAS and DME
- GPS Simulator

This is the most advanced test set ever made by TIC. The combination of hardware and software can test virtually any RF signal from 200 kHz to 2.0 GHz. As the lightest ruggedized tester on the market, the SDR-OMNI offers unmatched capability and ease of use.

Test functions are implemented using softwaredefined signal processes that generate, receive, and measure complex avionics signals covering narrow band analog or digital communications, complex navigation, and wide-band pulse or data protocols.



- Simple User Self-Calibration Verification reduces need to send unit to Cal Lab
- Class 1 MIL-SPEC ruggedness
- Color Display with Responsive Touchscreen
- Intuitive, Smartphone-style user interface
- Built in GPS for accurate ADS-B testing
- Self-guided Calibration Verification
- Long lasting Li-ion battery
- Transponder Antenna Coupler included
- Complete accessory kit for all applications

"Mission Critical RF TESTING Solutions"

The SDR-OMNI uses the latest in RF technology to generate and receive signals over a broad frequency range – 200 kHz to 2.0 GHz.

RELEASE 1

- **TRANSPONDER 1030/1090 MHz:** Automated FAR Part 43 Appendix F transponder test for ATCRBS and Mode S Transponders; EHS, GICB BDS registers, Manual testing (power, freq., % reply, SLS, etc.) **NOTE: OMNI-TAP Antenna Coupler is included**
- 1090 MHz ADS-B OUT: Decoded BDS registers and FAR 91.227 / AC60-165B required data
- 1090 MHz ADS-B IN: 4 simulated traffic targets for cockpit display verification
- 978 MHz UAT OUT: Decoded display of all required data
- 978 MHz UAT IN: 4 simulated traffic targets, FIS-B weather test
- VOR & ILS: Tests VOR receivers & ILS landing systems (simultaneous GS + LOC + MB)
- **COMM Radios:** HF/VHF/UHF COMM AM/FM Transceivers: Transmit and receive RF power, sensitivity, modulation, voice test of aircraft radio using included headset
- ELT (406 MHz + 121.5/243 MHz) EPIRB/PLB testing
- SELCAL: Test Selective Calling systems
- **RF CABLE & ANTENNA Test:** VSWR and DTF (Distance-to-Fault) for on-aircraft troubleshooting (VSWR calibration fixture included), Cable loss measurement
- CALIBRATION VERIFICATION: Guided calibration verification program

RELEASE 2

- TCAS I & II, ACAS
- DME

Release 3

- **GPS SIMULATOR:** Multi-satellite L1 GPS signal for position and aircraft movement simulation
- TACAN: 126 X/Y, GA, A/A A/A BCN

SDIT OITII	II AVAILBLE CONFIGURA	TIONS	
	SDR	SDR	SDR
Apps (Capability) Included	TRANSPONDER	NAV/COMM	ALL IN ONE
Transponder 1030/1090 APP	•		
TCAS I/II*	•		
UAT 978 IN/OUT APP			
ADS-B IN/OUT GCIB APP			
VSWR & DTF/Cable Loss			
NAV VOR/ILS/GS/MB APP			
DME APP*			
COMM APP			
ELT/EPIRB 121.2/243/406MHzAPP			
SELCAL APP			
Future Optional Apps			
GPS Simulator			
Spectrum Analyzer	Saparata Dawala	bad available in any ba	
TACAN (ITAR)	Separate Downic	Dau avaliable in any ba	ase configuration
MILITARY – Mode 5			
Accessories Included			
Hard Transit Case	•	•	
	•	•	
Hard Transit Case		•	
Hard Transit Case OMNI TAP Antenna Coupler	•		
Hard Transit Case OMNI TAP Antenna Coupler VSWR/DFT Calibration Bridge			
Hard Transit Case OMNI TAP Antenna Coupler VSWR/DFT Calibration Bridge Antenna 1 GHz			
Hard Transit Case OMNI TAP Antenna Coupler VSWR/DFT Calibration Bridge Antenna 1 GHz Antenna VOR/ILS	•	•	•
Hard Transit Case OMNI TAP Antenna Coupler VSWR/DFT Calibration Bridge Antenna 1 GHz Antenna VOR/ILS Antenna WiFi	•	•	
Hard Transit Case OMNI TAP Antenna Coupler VSWR/DFT Calibration Bridge Antenna 1 GHz Antenna VOR/ILS Antenna WiFi ELT Antenna		•	
Hard Transit Case OMNI TAP Antenna Coupler VSWR/DFT Calibration Bridge Antenna 1 GHz Antenna VOR/ILS Antenna WiFi ELT Antenna Direct Connect Cable		•	8 8 8 8 8 8



SDR-OMNI

SDR-OMNI SPECIFICATIONS

Power S	pecifications
Battery	Lithium Ion
	7.4 V; 7800 mAh
Duration – fully charged	> 3 Hours Continuous
	10 hrs @ 20% Duty Cycle
AC Input voltage	100 to 240VAC 50/60/400 Hz
DC Input voltage	12…28 VDC, 3.33 A (max)
Operating Temperature	-40°C to +55°C
Storage Temperature	-40°C to +70°C

Physical 0	Characteristics
Case Style	MIL-PRF-28800F, Class 2
Height	9.45" (24 cm)
Width	7.1" (18.03 cm)
Depth	2.25" (5.7 cm)
Weight Static	4.2Lbs. (1.9 kg)
Touch Screen	Capacitive

TAP-OMNI Transponder Antenna Coupler INCLUDED (SDR-TRANSPONDER & ALL in ONE)

The Antenna Coupler is included with the SDR-OMNI Transponder Test package. It can be hung on the top antenna or securely clamped to the bottom antenna.

- > 20dB shielding
- Ensures FAA compliance
- Solves multi-path issues in congested hangars
- Light weight and easy to use
- Ensures repeatable results
- Fits both "L" Type and Post antennas









SDR-OMNI

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То

From

RF Output

VOR Signa

+

NAVIGATION VOR/ILS/GS/MB

Easy to use and graphic interface to simulate the anticipated aircraft displays. All graphics are touch screen adjustable.

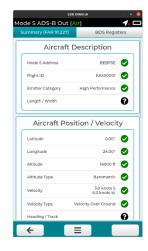


COMMUNICATIONS

Complete control of all aspects of the audio, modulation, RF output.

Detailed results of received signal (power, frequency, modulation).

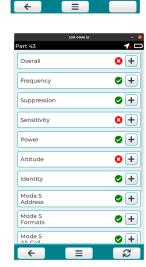
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- 000°

-40 dBm 108.000 MHz Disabled

Enabled Enabled From ~

 9960 Dev.
 9960 Mod.
 30142 Mod.
 10 Mod.

 480 Hz
 30 %
 30 %
 30 %

 ID Tone
 Tone Freq.
 Sweep Rad.
 Sweep Tim.

 Const V
 1020 Hz
 Disabled
 60.05

	SDR OMNI UI	
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MARKER BEACON M		
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	50Hz	
_	Enabled	
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1030/1090 MHz Transponder

Scroll through the results quickly or select detailed results of each parameter. Manually retest any parameter and download to save them as needed.

	SDR OMNI UI	
Analog Radio T Rx Test	est Tx Test	Common
KA TEST	TX Test	continion
Audio Level	RX Audio M	easurements
	p-p 🗸	SINAD V
		RF Generator
RF Frequency (MHz) 10.000000	+ - Dis	abled
RF Level (dBm)		
-10.00	+ -	
		Tone 1
Frequency (Hz) Dev	iation (kHz)	Ione
1000.00	0.00 Sin	e 🗸 Disabled
		Tone 2
Frequency (Hz) Dev	lation (kHz)	
1000.00	0.00 Sine 🗸	Disabled
		Mic
Level (kHz)		
0.00 Dis	sabled	
7		

Filter Bandwidth None Ext. Atten (dB) Modulation Connection	¶ k ⊂ Common UUT Setup n Type R Direct ♥ General
Filter Bandwithh None Est. Aban KBI Modulation Connection Narrow FM Mit Gain (MB) Connection Type	UUT Setup n Type 2 Direct Y
Filter Bandwidth None v Ext. Atten (dB) Modulation Connection T/R	n Type R Direct V
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Est. Atten 108) Modulation Connection 0.0 Narrow FM V T/F Mic Gain (dB) Connection Type	P Direct V
Mic Gain (dB) Connection Type	P Direct V
Mic Gain (dB) Connection Type	
Connection Type	General
Connection Type	Genera
Connection Type	
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Headset Volu	(dB)
5 T/R Ant A	
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TX A RX Direct	

Mission Critical RF TEST Solutions

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Product specifications and descriptions in this document are subject to change without notice.